

Reflection of Light (X)

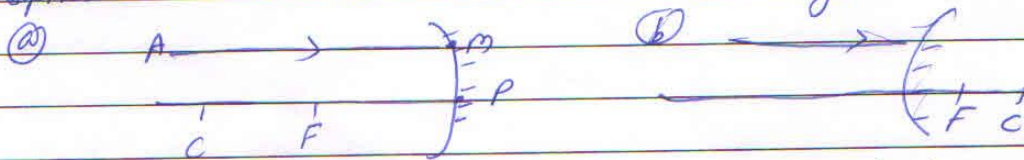
- Q What is the angle of reflection when a ray of light falls normally on a plane mirror?
- Q A man standing in front of a spherical mirror, finds his image having a very small head, a fat body and legs of normal size. What type of mirrors are used in these three parts?
- Q Define ~~to~~
- Q Distinguish between real image & Virtual image.
- Q What are the characteristics of the image formed by plane mirror?
- Q In what way is the word AMBULANCE printed in front of the hospital vans? Why is it printed this way?
- Q A man is going away from the plane mirror with a velocity of 3 m/s. With what velocity is he going away from his own image in the mirror?
- Q Explain why a ray of light passing through the centre of curvature of a concave mirror, gets reflected along the same path.

Q What is the nature of the image formed by a concave mirror if the magnification produced by the mirror is $+3$?

Q Between which two points of a concave mirror should an object be placed to
(1) obtain a magnification of -3 ?

(2) obtain on a screen an image twice the size of the object?

Q A ray of light AM is incident on a spherical mirror as shown in the diagram



Redraw the diagram on the answer sheet and show the path of reflected ray.

Q What kind of mirrors are used in the headlights of a motor-car and why?

Q "A concave mirror of focal length ' f ' can form a magnified, erect as well as an inverted image of an object placed in front of it." Justify this statement stating the position of the object with respect to the mirror in each case for obtaining these images.

Q List four properties of the image formed by a ~~to~~ convex mirror.

Q List four ~~in~~ properties of the image formed by a concave mirror, when object is placed between focus and pole of the mirror.

Q Define and show on a diagram, the following terms related to a concave mirror:

(a) Aperture (b) Radius of curvature (c) Focus.

Q What type of image is formed by—
(a) by a plane mirror (b) on a cinema screen

Q What is the minimum number of rays required for locating the image formed by a concave mirror for an object. Draw a ray diagram to show the formation of a virtual image by a concave mirror.

Q Draw ray diagrams to represent the nature, position and relative size of the image formed by a convex lens for the object placed—

(a) at $2F$

(b) between F_1 & the optical centre O of lens.

Q Distinguish between convex & concave mirror.

Q State the type of mirror preferred as

(a) rear view mirror in vehicles

(b) shaving mirror. Justify your answer giving two reasons in each case.

Q An object is placed between infinity and pole of a convex mirror. Draw a ray diagram & also state the position, the relative size and the nature of the image formed.

Q With the help of a ray diagram explain why a convex mirror is preferred for rear view mirror in motor cars.

Q List the sign conventions for reflection of light by spherical mirrors. Draw a diagram & apply these conventions in the determination of focal length of a spherical mirror which forms a three times magnified real image of an object placed 16cm in front of it.

Q It is desired to obtain an erect image of an object, using a concave mirror of focal length 20cm.

(i) What should be the range of distance of the object from the mirror?

(ii) Will the image be bigger or smaller than the object?

(iii) Draw a ray diagram to show the image formation in this case.